

Applicant : Ryosuke Usui et al.
Serial No. : 10/724,954
Filed : December 1, 2003
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Attorney's Docket No.: 14225-035001 / F1030610US00

Amendments to the Drawings:

The attached replacement sheets of drawings includes changes to FIGS. 10A-10D and 11A-11D and replace the original sheets including those figures.

FIGS. 10A-10D and 11A-11D have been labeled with the legend "Prior Art."

Attachments following last page of this Amendment:

Replacement Sheets (2 pages)

REMARKS

The claims have been amended to correct various informalities. New claim 14 has been added. Claims 1-14 are pending.

As required by the Examiner, FIGS. 10A-10D and 11A-11D have been labeled with the legend "Prior Art."

In the Office action, the claims were rejected as follows:

(1) Claims 1-5 and 12 were rejected as anticipated by U.S. Patent No. 6,083,775 (Huang et al.).

(2) Claims 6-9 and 11 were rejected as unpatentable over the Huang et al. patent in view of U.S. Patent No. 5,675,177 (Abys et al.).

(3) Claim 10 was rejected as unpatentable over the Huang et al. patent in view of U.S. Patent No. 3,541,379 (Holden).

(4) Claim 13 was rejected as unpatentable over the Huang et al. patent in view of Applicant's admitted prior art.

As discussed below, applicant respectfully requests reconsideration.

Claims 1-5 and 12 are patentable over the Huang et al. patent

The Huang et al. patent discloses a technique for encapsulating a chip. After a chip is attached to the substrate, the chip and the substrate are cleaned using a plasma (FIG. 8, steps 101, 103; FIG. 6, steps 602, 603). Therefore, the features of dependent claim 3 (plasma irradiation *prior* to mounting the circuit element) clearly are not disclosed.

The Office action alleges that FIG. 7 of the Huang et al. patent discloses separation grooves as recited in independent claims 1 and 2. The Huang et al. patent (at col. 4, lines 65-66) states that FIG. 7 is taken from US Patent No. 5,635,671 (Freyman et al.) (*see* FIG. 6C). The

only features in those figures which arguably might be “grooves” are the elongated slots 616 (not numbered in FIG. 6C; see FIGS. 6A and 6B) near the edges of a printed circuit board (PCB) strip 600. The PCB strip 600 may be formed of epoxy-glass or polyimide-glass (Freyman et al. patent, col. 6 lines 45-48). Therefore, whatever grooves might be provided in the PCB strip are not formed in a “conductive foil” “to form conductive patterns” as recited in pending claims 1 and 2.

Furthermore, the rejection of claims 1 and 2 (as well as other claims) is based on a combination of features taken from three completely different embodiments as follows:

(1) FIG. 8, which corresponds to a process apparently disclosed in U.S. Patent No. 5,542,171 (*see* Huang et al., col. 1, lines 50-54);

(2) FIG. 7, which, as discussed above, corresponds to FIG. 6C of U.S. Patent No. 5,635,671 (Freyman et al.); and

(3) FIG. 6, which shows a method of the alleged invention of the Huang et al. patent.

There is no basis for combining those different embodiments to obtain the subject matter of the pending claims, particularly because the Huang et al. patent itself criticizes the 5,542,171 patent and the 5,635,671 patent (*see* Huang et al. patent, col. 2, lines 26-27; col. 3, lines 7-8).

At least for the foregoing reasons, the rejections of claims 1-5 and 12 are improper.

Claims 6-9 and 11 are patentable over the Huang et al. patent in view of the Abys et al. patent

The Abys et al. patent relates to an integrated circuit (IC) unit and lead frame which are sealed within a protective enclosure. The Abys et al. patent discloses the use of an oxygen plasma cleaning process to remove impurities (col. 6, lines 7-8), but does not disclose the features missing from the Huang et al. patent, discussed above. Therefore, claims 6-9 and 11 should be patentable as well.

In addition, new dependent claim 14 has been added and recites that the grooves extend only partially through the conductive foil. Therefore, the subject matter of claim 14 is further distinguished from the Abys et al. patent, which discloses spaces between the leads 13 (or between the leads and the paddle 12) (*see, e.g.*, FIGS. 1 and 2 of the Abys et al. patent). Those spaces extend completely through the metal that forms the leads 13 and paddle 12.

Claim 10 is patentable over the Huang et al. patent in view of the Holden patent

The Holden patent was cited in the Office action because of its disclosure that inert gases may be used for gaseous plasmas (col. 4, lines 38-39). The Holden patent also does not disclose the features missing from the Huang et al. patent. Therefore, claim 10 should be patentable.

Claim 13 is patentable over the Huang et al. patent in view Applicant's admitted prior art

Regarding claim 13, the Office action states that it would have been obvious to use the technique in applicant's admitted prior art (FIGS. 10-11) of removing the back-side of the conductive foil to expose the rear surface of the resin layer. One reason for performing that step in the admitted prior art, and in applicant's invention, is to separate electrically the conductive regions from one another. However, there is no reason that a person of ordinary skill would have wanted to use such a technique in connection with the disclosure of the Huang et al. patent.

As explained by Court of Appeals for the Federal Circuit, a proper conclusion of obviousness under 35 U.S.C. § 103 requires that there be some motivation that suggests the claimed invention as a whole:

[A]n Examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for

piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be “an illogical and inappropriate process by which to determine patentability.”

[Citations omitted] To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show motivation to combine the references that create the case of obviousness.

In re Rouffet, 149 F.3d 1350, 1357; 47 USPQ2d 1453, 1457-1458 (Fed. Cir. 1998). As further explained by the Federal Circuit:

Our case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. “Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight.” Id.

“When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references.” In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998) (citing In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)).

Ecolchem, Inc. v. Southern California Edison Co., 56 USPQ2d 1065, 1072-73 (Fed. Cir. 2000). The showing of the motivation to combine must be “clear and particular.” *See, e.g., C.R. Bard*,

Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998); *Teleflex, Inc. v. Ficosa North Am. Corp.*, 63 USPQ2d 1374 at 1387 (Fed. Cir. 2002).

In the present case, there is simply no "clear and particular" motivation to combine the applicant's admitted prior art with the Huang et al. patent to obtain the subject matter of claim 13.

At least for the foregoing reasons, claim 13 also should be allowed.


Conclusion

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 4/5/05



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